3.0 ENVIRONMENTAL SETTING

The Project lies along the north shore of Lake Tahoe (Figure 1). Lake Tahoe is approximately 497.28 square kilometers (192 square miles) in size and one of the highest lakes (1,898.60 m [6,229 ft] elevation) in the United States. Mean annual precipitation ranges from over 55 inches/year in watersheds on the west side of the basin to about 26 inches/year near the lake on the east side of the basin. Most of the precipitation falls as snow between November and April. There is a pronounced annual runoff of snowmelt in late spring and early summer. In some years, summertime monsoonal storms from the Great Basin bring intense rainfall, especially to high elevations on the east side of the basin. High elevation and cool temperatures result in a short growing season, with an average of only 70 to 120 frost-free days per year (TRPA 1971).

Vegetation in the basin is dominated by mixed conifer forest of Jeffrey pine (*Pinus jeffreyi*), lodgepole pine (*P. murrayana*), white fir (*Abies concolor*), and red fir (*A. magnifica*). The basin also contains significant areas of wet meadows and riparian areas, dry meadows, brush fields, and rock crop areas. Soils in the basin are primarily derived from andesitic volcanic rocks and grandodiorite, with minor areas of metamorphic rock. Some of the valley bottoms and lower hill slopes are mantled with glacial moraines, or glacial outwash material. The basin soils are generally 65–85% sand.

3.1 Description of the Existing Biological and Physical Conditions

3.1.1 Biological Study Area

The Project BSA is approximately 325.77 hectares (805 acres), including a portion of SR 28, and residential and commercial surface streets adjacent to developed (urban) and undeveloped parcels (Figures 3 and 4). The boundaries of the BSA are Chipmunk Street to the east, SR 267 to the west, along a diagonal running west to east from Rainbow to Minnow Avenue to the north, and the shoreline of Lake Tahoe to the south.

3.1.2 Physical Conditions

The topography of the BSA is a gradual slope from the Project's northern boundary down to the shore of Lake Tahoe. Elevations range from approximately 1,914.14 m (6,280 ft) above mean sea level (amsl) to 1,898.90 m (6,230 ft) amsl at the lakeshore. The hydrology of the BSA mainly consists of Griff Creek, an additional ephemeral creek, and several scattered wetland areas (Figure 3). Surface water flow includes natural snowmelt and rain runoff. The climate of the site mirrors that of the Tahoe Basin, as described above.

The soils of the BSA sinclude alluvial (Gravelly Alluvial Land), morainal (Jabu), upland (Umpa), and Marsh soil types (SCS, USFS 1974). Alluvial soils are usually clay, silt, sand, gravel, or similar loose material deposited by running water. Morainal soils are an accumulation of earth and stones carried and finally deposited by a glacier. Upland soils are well-drained, coarse-grained soils. Marsh soil is the only soil type within the BSA that is hydric (i.e., soil that formed under conditions of saturation, flooding, or ponding long enough during the growing season to develop anaerobic conditions in the upper part of the soil profile (USDA, NRCS 1995).

3.1.3 Biological Conditions in the Biological Study Area

This section describes the biological setting of the BSA, including the vegetation communities; common, special-status, and invasive plant species; wetlands; wildlife; and wildlife habitat.

3.1.3.1 Vegetation Communities

The BSA is characterized by two principal vegetation communities: urban-altered Jeffrey pine and montane riparian. Several scattered wetland areas also are located within the area.

Urban-Altered Jeffrey Pine

The BSA contains approximately 313.79 hectares (775.4 acres) of urban–altered Jeffrey pine. This community is predominately second- and third-growth remnant forest stands of Jeffrey pine with incense-cedar (*Calocedrus decurrans*), some white fir, and ponderosa pine (*Pinus ponderosa*) providing additional tree cover. Commercial and residential areas are interspersed throughout the forest stands. The commercial zone of the Project area adjacent to SR 28 is primarily covered with structures and other hardscape features. The shrub understory within this urbanized community consists of sparse and scattered montane mixed chaparral species, including greenleaf manzanita (*Arctostaphylos patula*), antelope bitterbrush (*Purshia tridentata*), and snowberry (*Symphoricarpus* spp.). The herbaceous component of the understory is largely lacking. LSOGs, including Jeffrey pine, ponderosa pine, and incense cedar, are distributed sporadically throughout the BSA. Figure 3 shows the locations of these trees.

Montane Riparian

Riparian vegetation is located within the Griff Creek SEZ, the Kings Beach State Recreation Area, drainage outlets on the beach, topographically low areas located south of SR 28, and rock-lined channels within the residential and commercial areas that collect surface drainage (Figure 3). Predominant species include quaking aspen (*Populus tremuloides*), black cottonwood (*Populus balsamifera* ssp. *trichocarpa*), mountain alder (*Alnus incana* ssp. *tenuifolia*), and white poplar (*Populus alba*) in the tree overstory; and Woods rose (*Rosa woodsii*), chokecherry (*Prunus virginiana*), willows, and currant (*Ribes* spp.) in the shrub understory. Herbaceous species commonly observed in these areas include horsetail (*Equisetum* spp.), sedge (*Carex* spp.), rush (*Juncus* spp.), and Kentucky bluegrass (*Poa pratensis*). A band of emergent vegetation consisting of small fruit bulrush (*Scirpus microcarpus*) also was observed on a low-lying bench adjacent to Griff Creek and the containment basin (Figure 3).

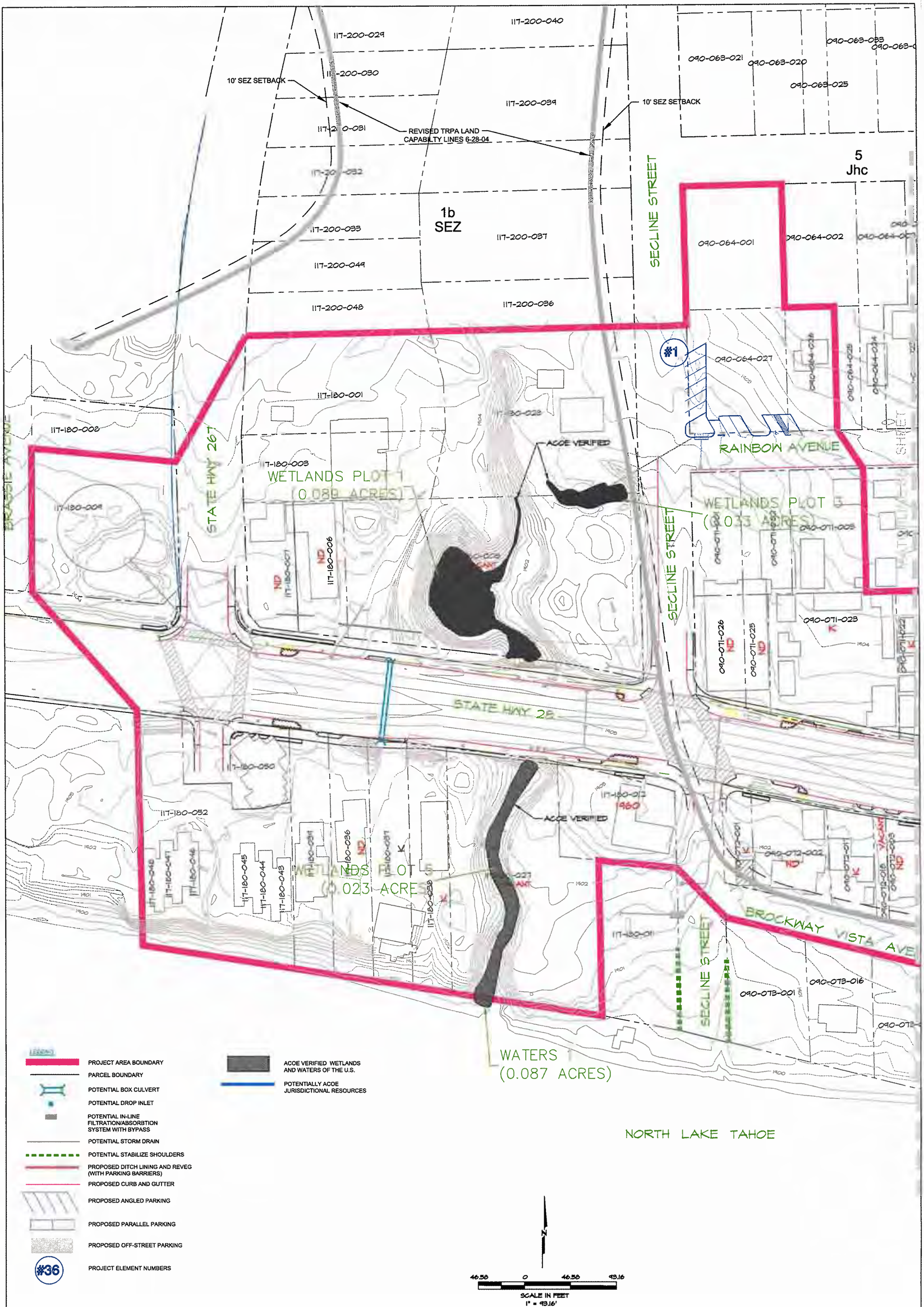

Figure 3 Sheet 1 of 6
Kings Beach Comercial Core Improvement Project
Potential and Previously Verified Jerisdictional Resoures

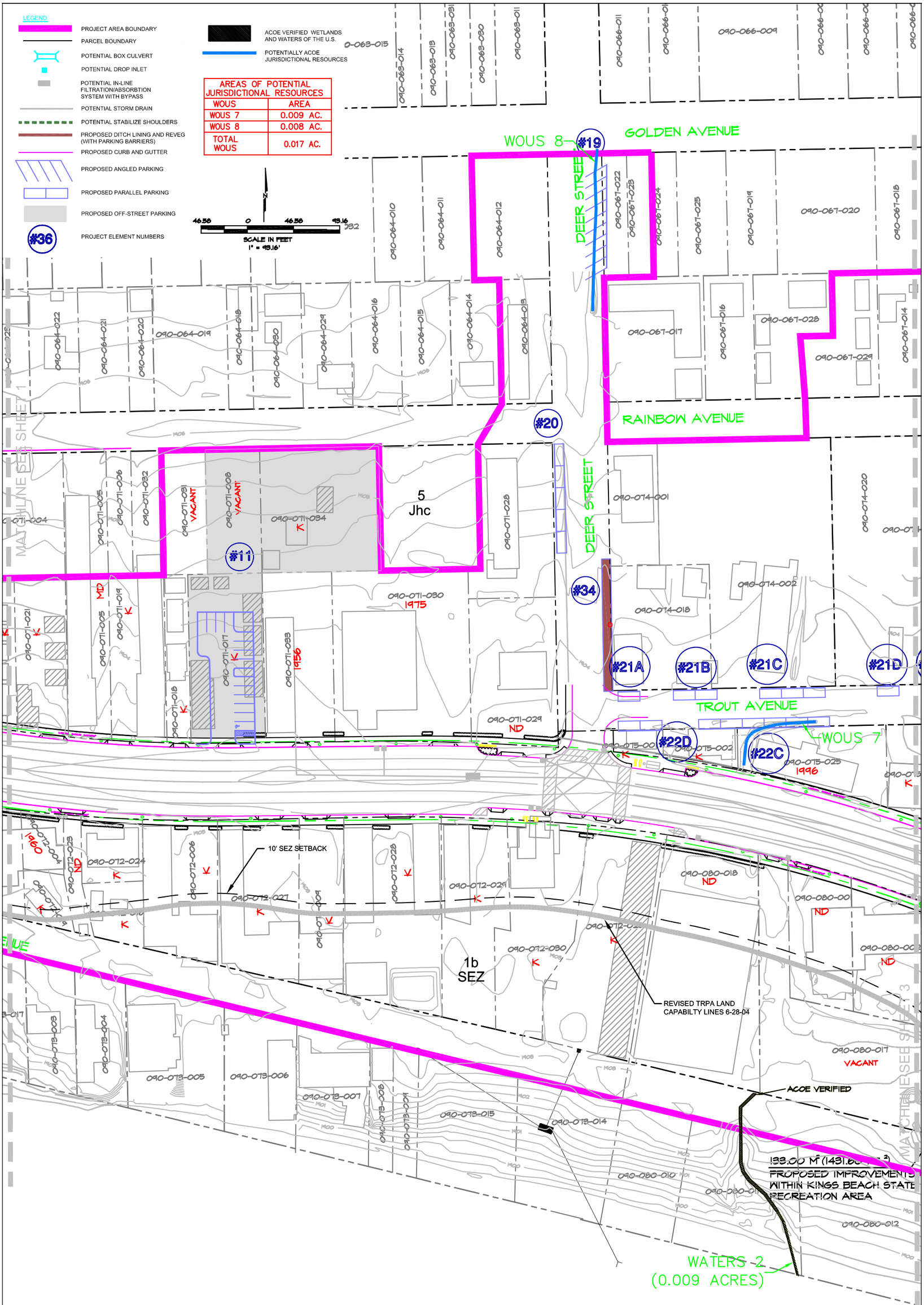

Figure 3 Sheet 2 of 6
Kings Beach Comercial Core Improvement Project
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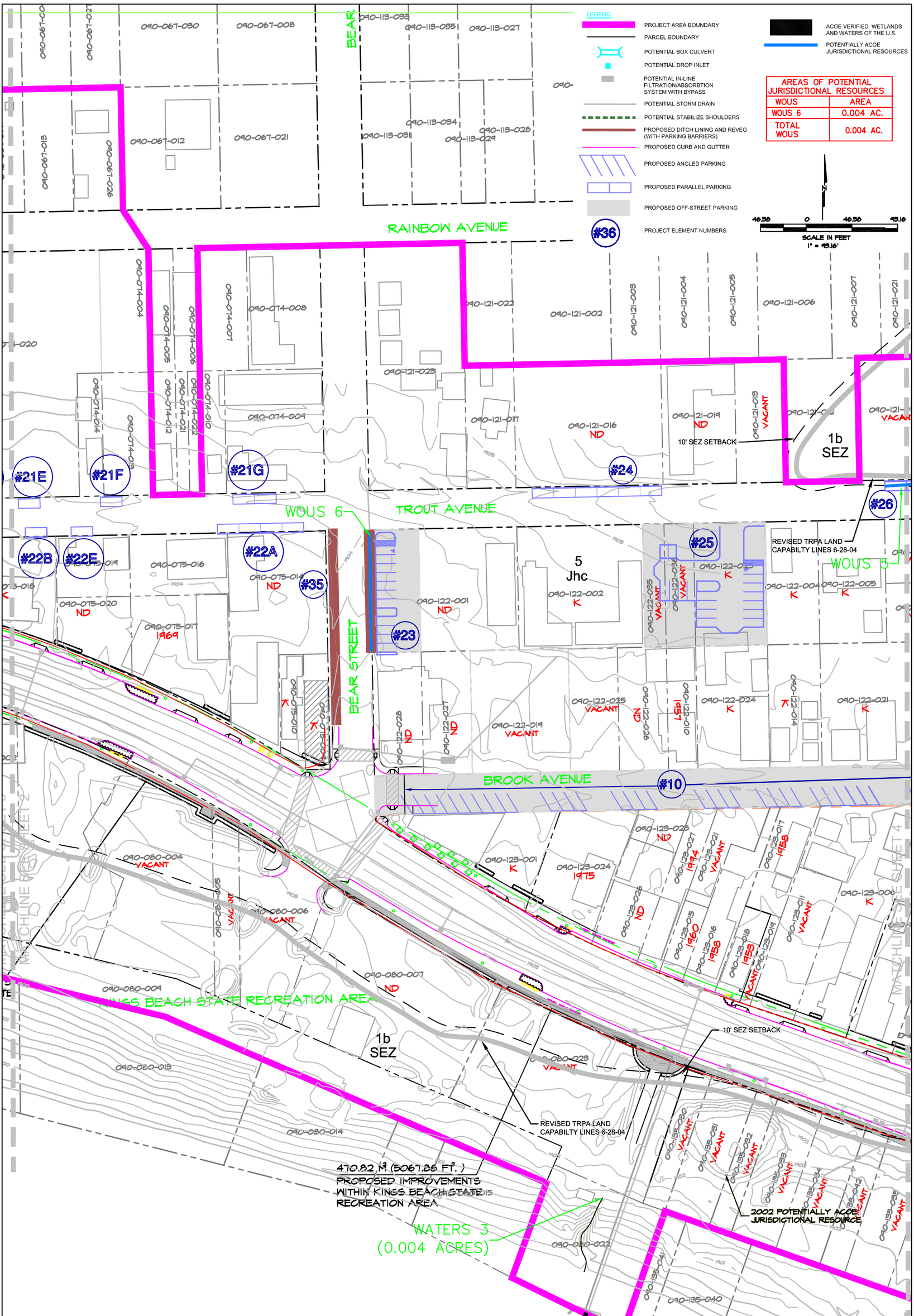

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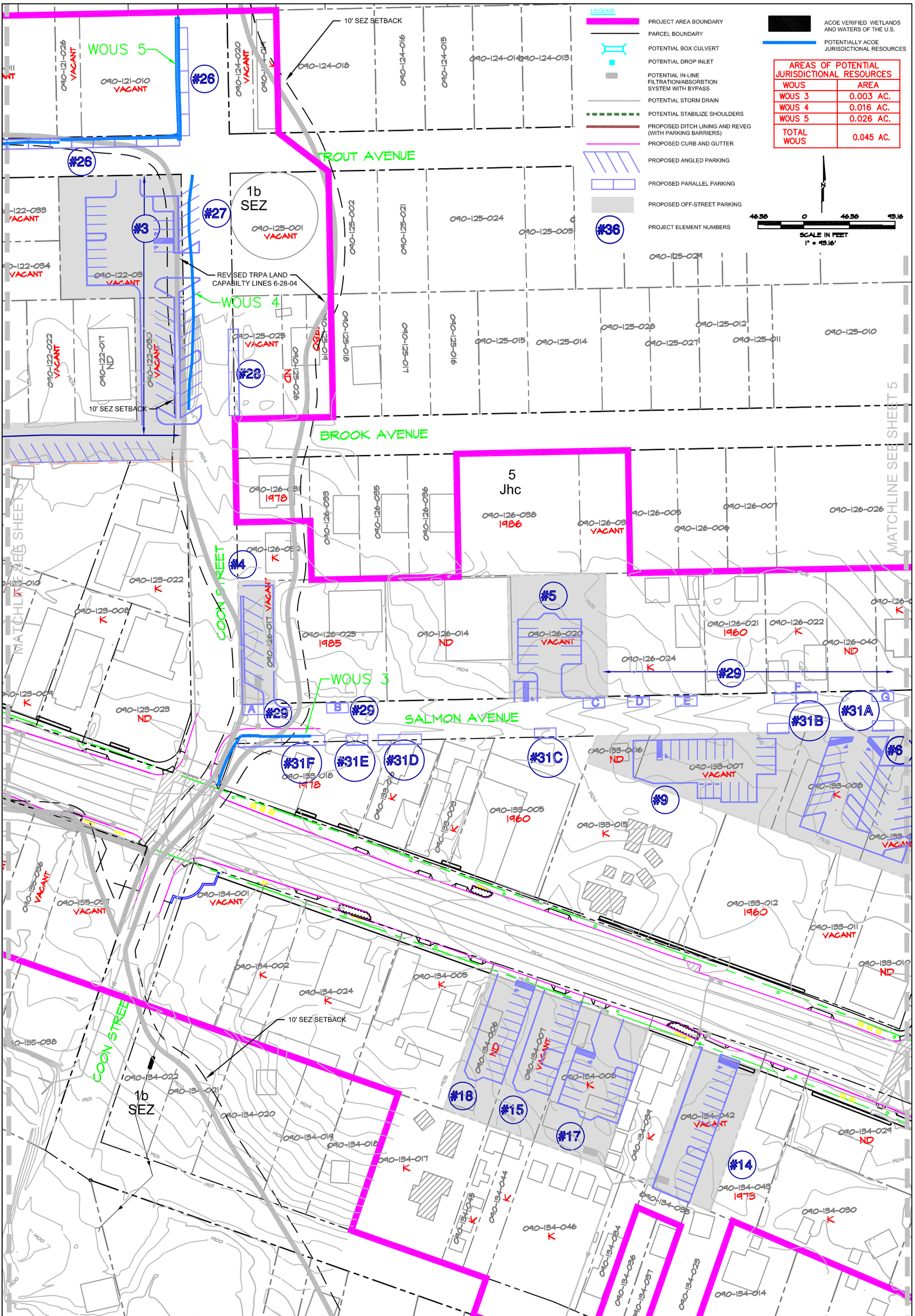

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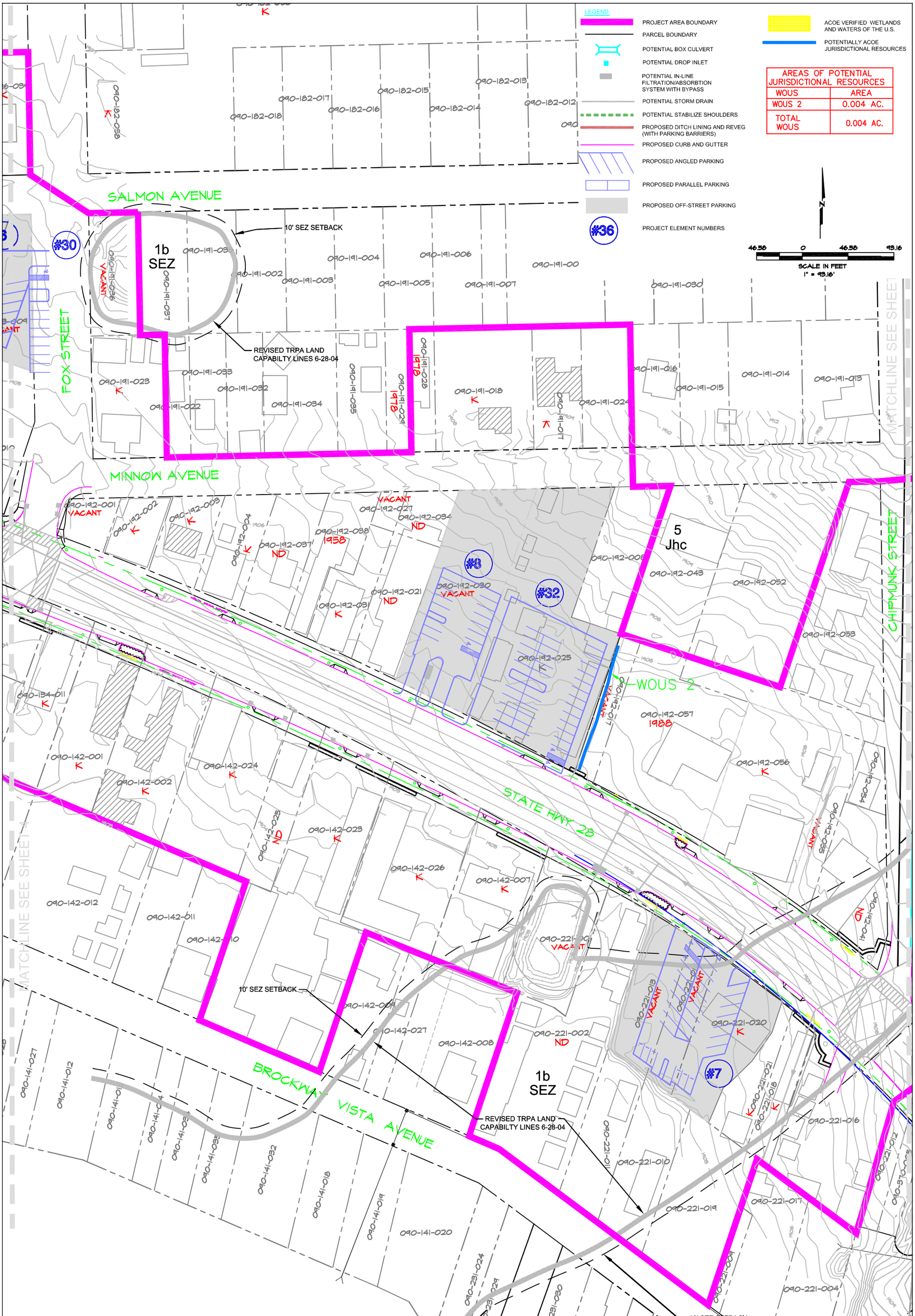

Figure 3 Sheet 5 of 6
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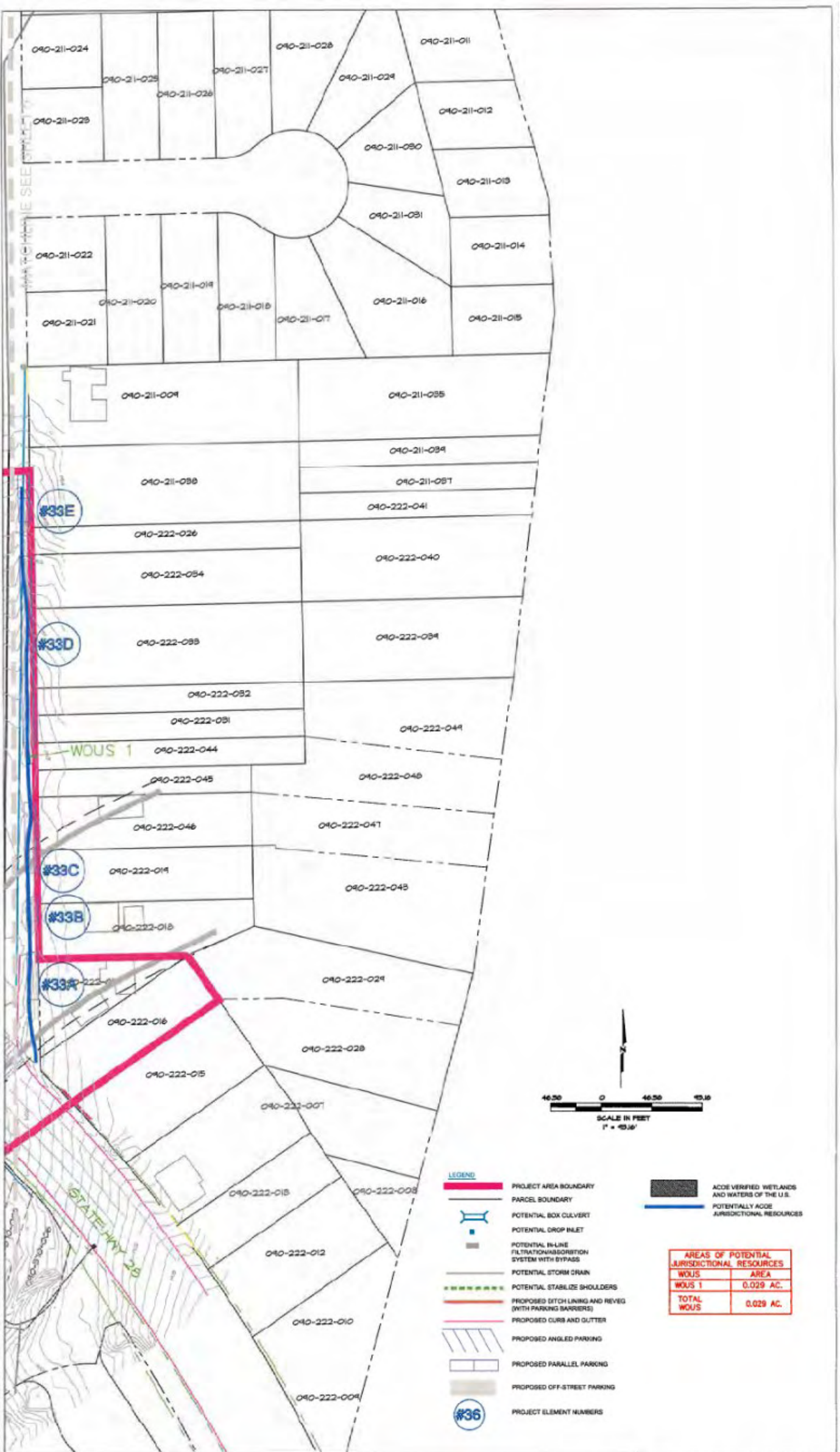

Figure 3 Sheet 6 of 6
Kings Beach Comercial Core Improvement Project
Potential and Previously Verified Jerisdictional Resoures

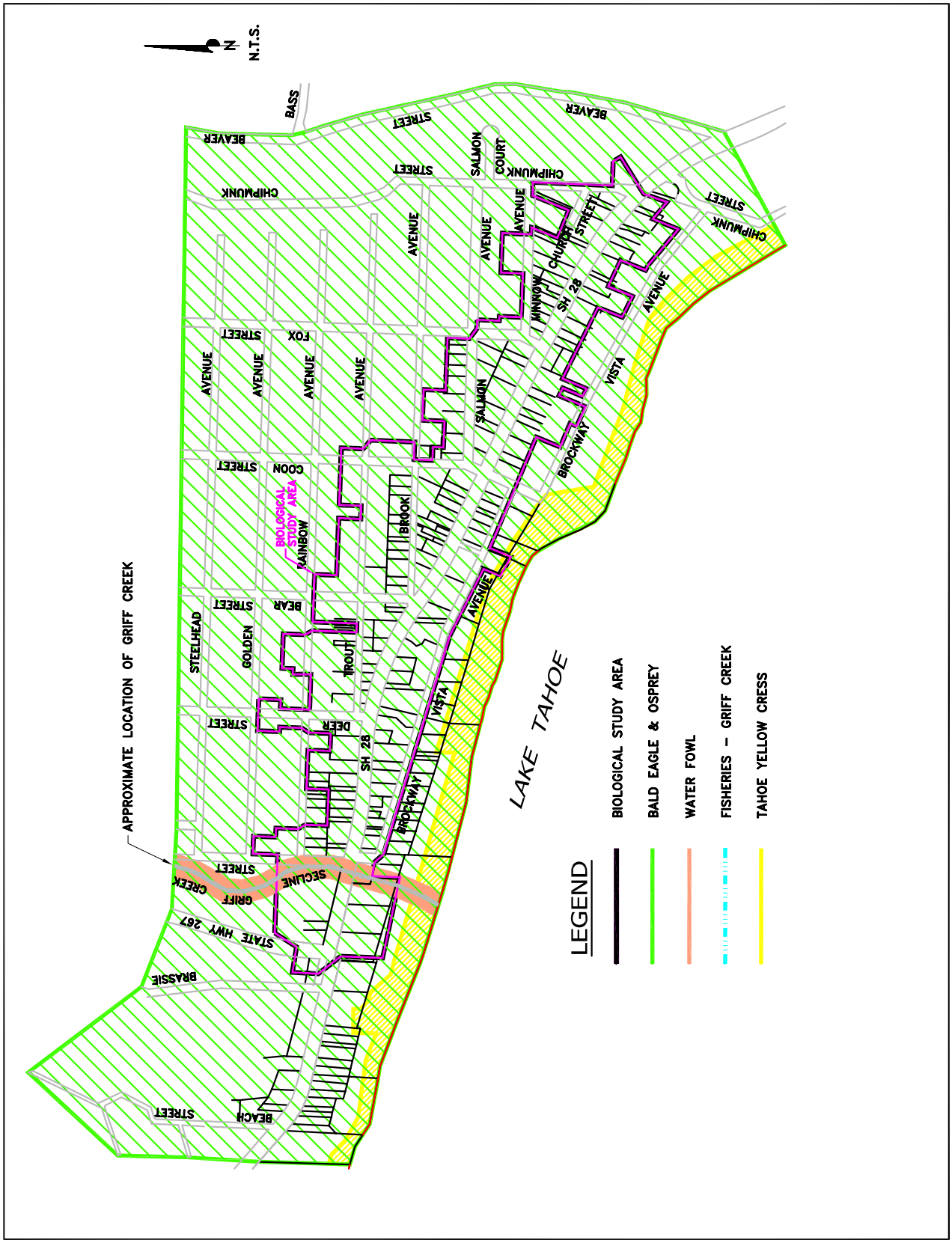

Figure 4
Special Status Species
Wildlife and Plant Habitat Map

3.1.3.2 Stream Environment Zones

TRPA land use classifications define SEZs as very sensitive, with a low tolerance for disturbance. They are therefore considered special-status communities. The TRPA performed a formal land capability verification of the Project area and provided Placer County with a map of the verified land capability boundaries on June 28, 2004 (Zeier 2004). The SEZ area designated by TRPA within the BSA covers approximately 84.58 hectares (209 acres). Land capability 1b indicates the presence of SEZs, as shown on Figures 2 and 3, and includes the 3.058-m (10-ft) SEZ setback. Within the BSA, verified SEZs are located within the vicinity of Griff Creek; south of SR 28 to and including the lakefront to just east of Coon Street; from near the intersection of Trout Avenue and Coon Street, following Coon Street to the lake; the corner of Salmon Avenue and Fox Street; and the southeast corner of the BSA.

3.1.3.3 Wetlands and Other Waters of the U.S.

Figure 3 shows the distribution and area of the wetlands and waters of the United States within the BSA. Based on the 2002 MACTEC delineation of the Project area, these wetland features include 0.50 hectare (1.23 acres) of wetlands and 0.18 hectare (0.29 acre) of other waters of the United States, including Griff Creek and a portion of an ephemeral stream. A follow-up delineation in 2004 identified the drainage ditches adjacent to various roadways as additional potential wetland areas. Of all these areas, the Corps has verified only 0.06 hectare (0.146 acre) of jurisdictional wetlands in 2001 (Appendix E). The Corps has not yet verified the 2002 and 2004 wetland delineations.

3.1.3.4 Weedy Plants

Both perennial and annual introduced weedy plant species were observed during the 2001, 2002, and 2004 field surveys. All noxious weed locations identified during these field surveys are presented in Figure 3.

The 2001 surveys for weedy plants in the BSA found no established populations of federally designated noxious weeds and no plants listed as exotic or potentially invasive in the *Focal Vascular Plant Species of the Lake Tahoe Basin* (Manley and Schlesinger 2000). However, the California Invasive Plant Council (Cal-IPC 1999) list indicated bouncingbet (*Saponaria officinallis*), bull thistle (*Cirsium vulgare*), and common muellin (*Verbascum thapsus*) as Group 2/ List B Priority Invasive Weeds of the Tahoe Basin (manage infestations with a goal of eradication) and wildland plants of lesser invasiveness. Bouncingbet was located in the Kings Beach Recreation Area, bull thistle on the northeast corner of Coon Street and Brook Avenue, and common muellin around the perimeter of the Griff Creek containment pond.

During the 2002 field surveys, two California designated noxious weeds, diffuse knapweed (*Centaurea diffusa*) and scotch broom (*Cytisus scoparius*), were found within the BSA area. Diffuse knapweed is an introduced List A California noxious weed species and a Group 1 Priority Invasive Weed of the Tahoe Basin (watch for, report, and eradicate immediately). Six knapweed plants were observed on the east side of Secline Avenue south of SR 28 in the park area. Scotch broom is an introduced List C California noxious weed species and a Group 1 Priority Invasive Weed of the Tahoe Basin. The scotch broom was observed on the west side of Secline Avenue, south of SR 28.

Other plant species found in the BSA during 2001 and 2002 and identified as exotic (non-native, introduced) by the *Focal Vascular Plant Species of the Lake Tahoe Basin*, include narrowleaf plantain (*Plantago lanceolata*), fowl bluegrass (*Poa palustris*), Kentucky bluegrass, tumblemustard (*Sisymbrium altissimum*), and common dandelion (*Taraxacum officinale*). Kentucky bluegrass is established in cultivated lawn areas in association with common dandelion and buckhorn plantain. Moist understory riparian areas supported fowl bluegrass and Kentucky bluegrass, where they have become naturalized. Common weedy species encountered on disturbed soils include goatsbeard (*Tragopogon dubius*), prickly lettuce (*Lactuca serriola*), filaree (*Erodium cicutarium*), and white sweetclover (*Melilotus alba*). The Cal-IPC list indicated black locust (*Robina psuedoacacia*), bouncingbet and common muellin as wildland pest plants of lesser invasiveness. Black locust and bouncingbet were located in the Kings Beach State Recreation Area and appear to be cultivated as ornamentals. Common muellin was found primarily around the perimeter of the Griff Creek containment pond.

No California designated noxious weeds were observed during the 2004 field surveys. However, a few bull thistle rosettes were identified as occurring within the BSA (see Figure 3).

3.1.3.5 Wildlife and Wildlife Habitat

The BSA covers approximately 325.8 hectares (805 acres), including a portion of SR 28 and residential and commercial surface streets adjacent to developed (urban) and undeveloped parcels. The dominant wildlife habitat type, as described in the California Wildlife Habitat Relationship System (DFG 1988), that occurs within the Project area is Jeffrey pine, with an urban component (313.82 hectares [775.4 acres]) interspersed throughout. In addition, 4.45 hectares (11.0 acres) of montane riparian habitat is found in the Project area. The Jeffrey pine/urban and montane riparian habitats were observed within residential, commercial, and undeveloped parcels of the Project area.

Jeffrey Pine/Urban

The dominant Jeffrey pine habitat occurs throughout the BSA and is interspersed with urban (commercial and residential) habitat. Other tree species occurring within the Jeffrey pine/urban habitat include ponderosa pine, white fir, and incense-cedar. Human disturbance associated with development within the BSA limits utilization of the area by special-status, special interest, and management indicator species sensitive to human activities, including the bald eagle (*Haliaeetus leucocephalus*) and osprey (*Pandion haliaetus*). Although foraging and wintering habitat for the bald eagle and osprey are available in the BSA, these species are unlikely to occur due to the high levels of human disturbance and development.

Many wildlife species utilizing the BSA area including Jeffrey pine/urban habitat will tolerate forests fragmented by urban development, especially when alternate food sources are available. Common mammal species known to utilize Jeffrey pine/urban areas include the chipmunk (*Eutamias* sp.), golden-mantled ground squirrel (*Spermophilus lateralis*), and Douglas' squirrel (*Tamiascirus douglasii*). Although less common, the Western gray squirrel (*Sciurus griseus*) was the only squirrel species to be observed in the BSA. The black bear (*Ursus americanus),* a LTBMU management indicator species, has adapted to urban development and is a frequent visitor to garbage cans and dumpsters. Numerous birds have adapted to this urban environment and reside in the BSA. Common birds species observed within the BSA include the mountain

chickadee (*Poecile gambeli*), American robin, Steller's jay, mourning dove (*Zenaida macroura*), warbling vireo (*Vireo gilvus*), and others as listed in Appendix B.

Montane Riparian

The montane riparian (MRI) habitat within the BSA is fragmented, with the most contiguous portion occurring within the Griff Creek SEZ. Other limited MRI habitat areas are scattered throughout the BSA, as presented in Figure 3. The overstory vegetation for this habitat includes quaking aspen, black cottonwood, and/or white poplar. The understory is comprised of Woods rose and/or chokecherry. Migratory birds and other special-status wildlife have the potential to occur within these limited areas of MRI habitat. The section of Griff Creek occurring within the BSA provides suitable habitat for migratory birds, waterfowl, and fish (Appendix B).

3.1.3.6 Migration Corridors

Wildlife migration corridors within the Kings Beach BSA are very limited in size. The riparian zones adjacent to Griff Creek, an additional ephemeral creek, and several scattered wetland areas provide the only MRI habitat for migratory birds and waterfowl in the BSA. Large and small resident mammal, reptile, and amphibian species may also use the Griff Creek corridor for seasonal migration movements, although none were observed during the field surveys. Griff Creek provides migratory and breeding habitat for brook and rainbow trout.

3.2 Regional Context

Table 2 identifies those species and natural communities of concern designated by USFWS, DFG, TRPA, and LTBMU with the potential to occur in the Lake Tahoe Basin area. Wildlife and plant species for which suitable habitat occurs within or in the vicinity of the BSA are indicated in Table 2 and are discussed after the table. Those species identified as not having suitable habitat within the BSA are not discussed further in this report. The regional species and natural communities of concern identified in Table 2 were obtained through consultation with USFWS, DFG, LTBMU, and TRPA (Appendix D).